



TO SEE OR NOT TO SEE? POST-OPERATIVE FOLLOW-UP IN GENERAL GYNAECOLOGY

Sam Lepine¹ | Henry Gribben² | Kristin Andre³ | Simon M Scheck⁴ | Fali Langdana⁵

¹ Chief Resident, Clinical Lecturer, Department of Obstetrics and Gynaecology, Capital and Coast District Health Board, University of Otago, Wellington, New Zealand.

² House Surgeon, Department of Obstetrics and Gynaecology, Capital and Coast District Health Board, Wellington, New Zealand.

³ Senior House Officer, Department of Obstetrics and Gynaecology, Capital and Coast District Health Board, Wellington, New Zealand.

⁴ Registrar, Department of Obstetrics and Gynaecology, Capital and Coast District Health Board, Wellington, New Zealand.

⁵ Consultant, Senior Clinical Lecturer, Department of Obstetrics and Gynaecology, Capital and Coast District Health Board, University of Otago, Wellington, New Zealand.

ABSTRACT

Background: There is no convincing evidence of benefit to routine post-operative follow-up appointments in general gynaecology; evaluation of comparable health care systems suggests this may be omitted without detriment. This may open up avenues for improved efficiency of outpatient clinics with decreased expense to the patient.

Aims: This study sought to describe the burden of post-operative follow-up and provoke discussion on alternative models of care.

Materials and Methods: This retrospective audit was conducted of 767 patients attending their first post-operative outpatient appointment following benign gynaecological surgery in 2017. Demographic and clinical details were recorded as was patient travel, histology, presence of complications or complaints and closing outcome.

Results: Seventy-three per cent of the time there was no clear benefit to the post-operative appointment. All cases of pre malignant or malignant histology were reliably suspected pre-operatively. There was no clinical information that had a significantly increased risk of complication, complaint or need for further input.

Conclusions: This study indicates that conventional post-operative care may add cost to both system and patient without demonstrable benefit in a large proportion of cases. Formulating a virtual clinic for telephone follow-up in benign gynaecology would require co-ordination from multiple stakeholders but may considerably improve the efficiency of our service.

KEYWORDS: Gynecologic surgery, Outpatient clinic, Follow-up care, Gynecologic diseases, Aftercare.

INTRODUCTION:

The evidence for routine post-operative follow up is limited. Traditional care in outpatient gynaecology involves a routine follow-up appointment approximately six weeks following an operation or procedure, as evidenced by several large trials^{1,2}. This approach seems to be largely historical in nature with limited evidence or clinical guidelines to guide optimal post-operative review.

A review of the relevant literature yielded no results when searching for studies comparing traditional post-operative follow-up with no follow-up within gynaecology or other surgical specialties. A broader review of post-operative care revealed several studies comparing different post-operative practices. Within the field of gynaecology these studies are focused on oncology patients and no comparison is made to no follow-up^{3,4}. A Cochrane systematic review from 2006 compared telephone follow-up to standard care involving 33 randomised control trials including 5110 patients. The authors note the overall low methodological quality of included trials and meta-analysis was largely not possible due to heterogeneity. Despite this, the overall conclusion was that strategies were clinically equivalent⁵. A thorough review of these 33 studies revealed that the majority were inappropriate to generalise to our population. Two relevant studies, however, demonstrated telephone follow-up was associated with improved compliance with the plan and prescriptions, decreased anxiety, improved confidence with self-care and improved patient satisfaction^{6,7}.

There are myriad possible outcomes of interest when investigating post-operative follow-up. Kimman *et al.* in 2011 published a randomised controlled trial comparing nurse-led follow-up vs. hospital visits vs. educational group programmes. This trial was unique in that it utilised cost diaries to determine financial effect on the patient of the traditional follow-up. The primary outcome of interest was a measure of efficiency and found that nurse-led follow-up was the most effective in terms of expenditure per quality adjusted life years⁸. The most insightful trial identified in our search was observational in nature; Fischer *et al.* in 2015 investigated the efficacy and utility of phone follow-up in lieu of traditional post-operative clinics following paediatric surgery. This was a structured nurse-led enquiry of cases selected as at a low likelihood of post-operative

complexity and revealed significant benefits to the healthcare system. The authors found a 35% decrease in post-operative visits, 93% satisfaction and an 89% cost savings to the healthcare system⁹.

There is no obvious historical basis to our current approach to post-operative care, no guidelines published from relevant training bodies or the ministry of health and review of comparable healthcare systems may suggest this routine visit may be able to be omitted. The aim of our study is to investigate if this omission may be without any clinical detriment and could represent an avenue for large improvements in efficiency to the healthcare system with broad patient benefit.

MATERIALS AND METHODS:

A retrospective chart review was conducted from January 1st to December 31st 2017 in Wellington New Zealand in a public, tertiary, teaching hospital and a smaller peripheral unit collectively under the Capital and Coast District Health Board (CCDHB). The CCDHB provides public health care to a catchment area with a population of approximately 300,000 from Wellington city, Porirua and the Kapiti coast. The population served has one of the lowest levels of deprivation within New Zealand with lower than national proportion of Maori (10%) and higher than average Pacific (7%) and Asian peoples (11%)¹⁰.

A descriptive qualitative study design was used. The study was approved by the Capital and Coast District Health Board Audit and Research Committee. As this study conforms to the standards established by the National Health and Medical Research Council for ethical quality review, ethical approval was not required¹¹.

We assessed the eligibility of all patients who attended outpatient clinics within CCDHB during the study timeframe with initial data pooled from the outpatient clinic database. Paper notes and electronic records were reviewed via the Concerto® information management system. We excluded the following groups of patients: gynaecologic oncology; colposcopy; and those patients who did not attend (DNA).

This set of patients had their age, ethnicity and address recorded. Distance travelled to attend the appointment was calculated using Google Maps®. The indication for surgery and operation title were recorded. The indication was coded using the umbrella terms such as 'prolapse' or 'pelvic pain' and using the PALM-COIN classification system for abnormal uterine bleeding¹². Where there were multiple different procedures performed concurrently the procedure with the highest degree of risk was recorded (for example, a diagnostic hysteroscopy plus operative laparoscopy would be coded as operative laparoscopy). The outcomes of interest were the frequency of complications or complaints, malignant or benign histology and closing outcome classified as; discharge, further follow-up arranged, referred to other services.

RESULTS:

We identified an initial data-set of 6313 patients attending included outpatient clinics, of which 767 were included for analysis as patients attending their first post-operative appointment. There was an age range of 14 to 92 years of age with a mean age of 45 years. The majority of patients (58%, n=441) were of NZ European ethnicity, 11% (n=81) Other European and 11% NZ Maori (n=80) (Table 1). Patients travelled an average of 18 kilometres to attend clinic.

The most common indications for surgery were abnormal uterine bleeding, 36% (n=277), and pelvic pain, 20% (n=154). (Table 2). The most common operations performed were operative laparoscopy 31% (n=236) and hysteroscopy, 29% (n=223). Laparoscopic hysterectomy, abdominal hysterectomy, laparotomy, vaginal hysterectomy and prolapse surgery are generally considered major operations and collectively equated to 28 per cent of operations performed (n=215) (Table 3).

Malignant or pre-malignant histology was reported in 17 patients (2.2%). On review of these cases, all were flagged as having a high suspicion of cancer pre-operatively. Complication or post-operative complaint raised was raised by 96 of patients (13%). Further gynaecology follow-up was arranged for 165 patients (22%). Referral to other services (e.g. fertility, pain service, oncology, general surgery or urology) was arranged for 26 patients (3%) (Table 4).

DISCUSSION:

Here we describe routine post-operative six week follow up for 767 patients seen by our general gynaecology service. Of the 767 patients included, 559 (73%) had neither a complication nor complaint and had benign histology. This may be a group of patients that received minimal or no benefit from a face to face post-operative appointment. These visits were scheduled for 15 minutes each and omitting some or all of these represents a potential avenue to dramatically reduce cost, increase efficiency and reduce unnecessary patient travel and time; in turn generating discussion as to alternative means for post-operative follow-up.

The post-operative follow-up in Sweden is dramatically different to that in CCDHB and most New Zealand hospitals. There they have an exclusively electronic system and follow-up is via a posted questionnaire at eight weeks, three months and one year post operatively along with a letter to the patient outlining the histological findings¹³. The information is fed back to the surgeon involved

with the opportunity to arrange a visit if deemed necessary. This system applies to all operations for all indications with no case selection involved and is standard throughout the country. Discussion locally amongst gynaecology staff raises concern that this approach may be too dramatic a departure from current practice.

An alternative to this strategy to consider would be a model where case selection is employed. If case selection were to be utilised, selected cases should be a common operation for a common indication and without a higher than average expected rate of complaint, complication, need for further follow-up or need for referral. Patients with a high suspicion of cancer or undergoing major surgery would be inappropriate for case selection. Those undergoing hysteroscopy and operative laparoscopy may be considered and represent 12 and 14% of our case-load respectively. Neither hysteroscopy, (OR 1.00 95% C.I 0.67-1.52), nor operative laparoscopy, (OR 1.06 95% C.I 0.84-1.82), had an increased likelihood of complaint or complication. If selecting cases by indication, neither post-menopausal bleeding, (OR 0.87 95% C.I 0.55-1.37) nor abnormal uterine bleeding due to fibroids, polyps or ovulatory dysfunction, (OR 1.37 95% C.I 0.62-1.09) required further follow-up or referral more frequently than average.

Abnormal and post-menopausal bleeding coupled with hysteroscopy or operative laparoscopy represents a large proportion of general gynaecology and this suggests to the authors that these cases may be selected to have follow-up omitted without detriment. This paper is limited by its retrospective nature as it may bias demographics and outcome data. Prospective research would be beneficial and may take the form of selecting these cases and comparing telephone follow-up with standard care. There is systematic review evidence of benefit to telephone follow-up showing feasibility, improved patient satisfaction, decreased patient anxiety and decreased unplanned hospital visits and that written and verbal information is preferable to verbal alone^{5,14}. It would fall to the service to ensure inequity is addressed as it relates to language, hearing and access barriers and consideration to whom, when and how the telephone follow-up is conducted would be important if this approach is trialled. There may be myriad outcomes of interest but primarily should be clinical in nature. Secondary outcomes of interest may be financial and quality of life measures.

Finally, there may be unforeseen consequences of altering our post-operative routine as it relates to workload of clinicians and revenue streams in the public hospital setting. Despite this, with prospective study on selected cases it is the authors' opinion that there admittedly exists a small risk of detrimental effects yet a potentially massive opportunity to improve efficiency and satisfaction for healthcare system and patient alike.

Acknowledgements:

The Authors would like to acknowledge Peter Wash, information specialist, and Denise Braid, Charge nurse manager for their assistance in data acquisition.

Competing Interests:

The authors have no conflicts of interest to declare

Table 1: Ethnicity of participants

Ethnicity	Number	Percentage
NZ European	441	57.5
Other European	81	10.6
NZ Maori	80	10.4
Samoa	38	5
Chinese	21	2.7
Indian	21	2.7
Southeast Asian	18	2.3
Asian other	16	2.1
African	10	1.3
Cook Island Maori	9	1.2
Middle Eastern	7	0.9
Tokelauan	6	0.8
Latin	5	0.7
Fijian	5	0.7
Tongan	1	0.1
Not Stated	8	1.0
Total	767	

Table 2: Indication for surgery

Indication	Number	Percentage
Abnormal Uterine Bleeding	277	36.1
- AUB - A	18	2.3
- AUB - L	104	13.6
- AUB - M	15	2
- AUB - O	93	12.1
- AUB - P	47	6.1
Pelvic Pain	154	20.1
Ovarian Cyst	85	11.1
Postmenopausal Bleeding	73	9.5
Pelvic Organ Prolapse	71	9.3
Infertility	29	3.8
Incontinence	28	3.7
Ectopic	9	1.2
Other	41	5.3
Total	767	

Table 3: Operations performed

Operation title	Number	Percentage
Operative laparoscopy	236	30.8
Hysteroscopy	223	29.1
Sling procedure	23	3.0
Examination Under Anaesthesia	19	2.5
Endometrial Ablation	16	2.1
Botox injection	15	2.0
Major Procedures	215	28.0
- Vaginal Repair	68	8.9
- Abdominal Hysterectomy	56	7.3
- Total Laparoscopic Hysterectomy	48	6.3
- Vaginal Hysterectomy	19	2.5
- Laparotomy (other)	20	2.6
Total	767	

Table 4: Closing outcome

Closing outcome	Number	Percentage
Malignant/pre-malignant	17	2.2
Complication or complaint	96	12.5
Referral to other services	26	3.4
Further gynaecology follow-up	165	21.5
Minimal or no benefit from appointment†	559	72.9

† Defined as benign histology, nil complication/complaint and no further follow-up required

REFERENCES:

- Fraser IS, Angsuwathana S, Mahmoud F, et al. Short and medium term outcomes after rollerball endometrial ablation for menorrhagia. *Med J Aust* 1993;158:454–7. <http://www.ncbi.nlm.nih.gov/pubmed/8469193> (accessed 7 Oct 2018).
- McPherson K, Metcalfe MA, Herbert A, et al. Severe complications of hysterectomy: the VALUE study. *BJOG An Int J Obstet Gynaecol* 2004;111:688–94. doi:10.1111/j.1471-0528.2004.00174.x
- Clarke T, Galaal K, Bryant A, et al. Evaluation of follow-up strategies for patients with epithelial ovarian cancer following completion of primary treatment. *Cochrane Database Syst Rev Published Online First: 8 September 2014*. doi:10.1002/14651858.CD006119.pub3
- Moschetti I, Cinquini M, Lambertini M, et al. Follow-up strategies for women treated for early breast cancer. *Cochrane Database Syst Rev Published Online First: 27 May 2016*. doi:10.1002/14651858.CD001768.pub3
- Mistiaen P, Poot E. Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home. *Cochrane Database Syst Rev Published Online First: 18 October 2006*. doi:10.1002/14651858.CD004510.pub3
- Gombeski WRJ, Miller PJ, Hahn JH, et al. Patient callback program: A quality improvement, customer service, and marketing tool. *J Health Care Mark* 1993;13:60. <https://search.proquest.com/openview/c1adbcfb85b504d0bc88c13870bf/b221/1?pq-origsite=gscholar&cbl=36770> (accessed 7 Oct 2018).
- Jerant AF, Azari R, Nesbitt TS. Reducing the cost of frequent hospital admissions for congestive heart failure: a randomized trial of a home telecare intervention. *Med Care* 2001;39:1234–45. <http://www.ncbi.nlm.nih.gov/pubmed/11606877> (accessed 7 Oct 2018).
- Kimman ML, Dirksen CD, Voogd AC, et al. Economic evaluation of four follow-up strategies after curative treatment for breast cancer: Results of an RCT. *Eur J Cancer* 2011;47:1175–85. doi:10.1016/j.ejca.2010.12.017
- Fischer K, Hogan V, Jager A, et al. Efficacy and utility of phone call follow-up after pediatric general surgery versus traditional clinic follow-up. *Perm J* 2015;19:11–4. doi:10.7812/TPP/14-017
- Capital and Coast District Health Board. The Women's Health Service Annual Clinical Report 2016. Wellington, New Zealand. Accessed at: <https://www.ccdhb.org.nz/news-publications/publications-and-consultation-documents/ccdhb-whs-2016-annual-clinical-report.pdf> October 2018
- National Health and Medical Research Council. Ethical Considerations in Quality Assurance and Evaluation Activities. 2014. Accessed at <https://nhmrc.gov.au/about-us/publications/ethical-considerations-quality-assurance-and-evaluation-activities> October 2018
- Munro MG, Critchley HOD, Broder MS, et al. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. *Int J Gynecol Obstet* 2011;113:3–13. doi:10.1016/j.ijgo.2010.11.011

13. Ladfors MB, Löfgren MEO, Gabriel B, et al. Patient accept questionnaires integrated in clinical routine: a study by the Swedish National Register for Gynecological Surgery. *Acta Obstet Gynecol Scand* 2002;81:437–437. doi:10.1080/j.1600-0412.2001.810511.x
14. Johnson A, Sandford J, Tyndall J. Written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home. *Cochrane Database Syst Rev* Published Online First: 20 October 2003. doi:10.1002/14651858.CD003716